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ORIGINAL ARTICLES.

How Often Do Our Bodies Change?

By D. B. COLCORD, B.S., M.D., Topeka, Kas.

It is an old saying that our bodies change every seven years, and as popular sayings generally have some truth in them, I have been led to inquire how much truth there is this.

We live by what we eat, drink and breathe; or, more strictly, by the materials we absorb and assimilate from food, water and air.

Oxygen is absorbed by the blood to the amount of about 1.4 pounds per day in a body weighing 150 pounds, and about one-half pound of carbon is given off in carbon dioxide through the lungs in return.

The oxygen thus inhaled is carried away by the red blood corpuscles and becomes thus a part of the living body.

The carbon dioxide exhaled is estimated at two and one-fourth pounds daily, besides nearly three-fourth pound of watery vapor, making a daily loss through the lungs of about three pounds.

All the tissues of the living body are compounds of oxygen, hydrogen, nitrogen and carbon, combined with small amounts of many of the other elements.

The carbon and nitrogen are taken into the body mostly in food, while the hydrogen is taken as H_2O in water.

Nearly all the nitrogenous waste of the body is excreted by the kidneys, which excrete about three pounds of fluid daily, containing rather more than one ounce of urea. This loss by the kidneys, added to the loss through the lungs, make a daily loss of more than six pounds, which is taken from the blood. Besides these losses, the blood supplies materials for the secretions as follows: Bile, two pounds daily; saliva, two pounds; gastric juice, one pound or more; and pancreatic and intestinal fluids probably one pound more, making a total daily loss to the blood of twelve pounds; to which, if we add two pounds for perspiration and one pound for glycogen, serous fluids, mucus and other losses, we shall have a daily loss of fifteen pounds, which is equal to the whole weight of the blood. Hence we may say, in general, that the soft parts of the body are changed by the weight of the blood daily or suffer a change equal to the entire weight of the body in ten days.

The living body is made up of living cells and their chemical products together with the chemical media in which they live. These cells constitute the organs and tissues of the body, and as they change the whole body changes.

The blood contains red corpuscles which are in constant motion, and which constitute, in a certain sense, the life of the body.

Into the blood is poured daily, through the lymphatics, a quantity of non-living fluid, equal in amount to the blood itself, and we have just seen that from the blood is taken an equal amount of materials in secretions and excretions, yet the blood's averave density and physical characters are not materially changed thereby.

The study of the life-history of the blood cells has been attended with so many difficulties that neither their place of birth, their chemical composition, nor the manner of death has yet been fully proved.

It is estimated that more than 200 trillions of red blood corpuscles are present in the blood of a healthy adult, a number so large as to be almost incomprehensible, yet it may be shown that each cell can live but a short

time; and that when blood is drained from the body, decreasing the number of blood cells, new cells are formed very rapidly to make good the loss. The life-history of all cells includes birth, growth, secretion or work, propagation of its species and death.

The blood cells are born either in the blood plasma or in the tissues; they grow to maturity so rapidly as to practically elude our observation; they pass through the body rapidly, taking oxygen from the air and carrying it to the tissues, returning with CO_2 to the lungs, which is a part of their life work, and then complete the cycle by death, though where or how we do not know. What, then, are the limitations of their lives? They can complete the circuit of the body in four minutes, and during that time molecular changes take place which essentially modify their chemical composition, but do not materially change their form or size.

Let us now study the life of the red corpuscles from the facts we have.

1. In each cubic centimeter of blood plasma there are about five millions of red cells.

Osler states that after the loss of a large quantity of blood the number of red cells may increase at the rate of 50,000 cells per cubic millimeter daily, which would make it possible to renew the entire blood in 100 days, but Quincke maintains that the blood cells do not live more than twenty or thirty days. Osler reports a case in which ten pounds by measurement of blood was lost in one week by hæmoptysis, with recovery, in which the 1,390,000 cells per cubic millimeter were found at the end of the week. In severe hemorrhages it has been found that restitution of the normal amount of blood cells sometimes occurs within ten days, which facts, with the evidence that the normal destruction of the red cells is not suspended by loss of blood, would tend to confirm the statements of Quincke that the average life of red cells may be taken as less than one month and more than four minutes.

In the study of the life-history of the skin and mucous membranes of the body, the cell life of epidermic and epithelial cells may be observed more easily than the blood cells, and their origin, growth, proliferation and death have been noted by many observers. The epidermic cells are variously modified to form the skin and its appendages, as the nails and hairs.

The epidermis is made up of numerous layers of epidermic cells, the outer ones being dead cells which have been pushed to the surface by the proliferation and growth of the living cells beneath.

These layers have been named according to their appearance and structure, but are all derived from the stratum corium or columnar cells covering the corium.

The thickness of the epidermis varies from less than one millimeter to three millimeters, and the thickness of the cells varies from 1-1500 to 1-200 millimeters. This makes the number of layers equal to 200 to 4,500, but as the cells are thicker where less exposed to pressure, the average number may be counted as about 2,500. The outer cells are constantly becoming lost by attrition or friction, as in bathing, etc., and the waste from this cause varies greatly by circumstances, but it is found that the entire thickness of the epidermis will be renewed in from five to fifteen days, making the average life of the epidermis about ten days. But as all the layers of the epidermis are made by proliferation of the columnar cells, about 250 layers must be made each day or the life of each cell is less than six minutes before proliferation. In the case of the nails there is a modification of the cells, which causes the formation of the horny material of which the nails are composed, and the horny layers are cut or broken off as fast as they become of undue length, making the average life of the whole nail about forty or fifty days, and the life of the matrix cells somewhat longer than the life of the ordinary epidermic cell.

In the case of the hairs, there is a more complicated structure, but the portion which protrudes beyond the skin is devoid of living properties, and is, in part, a product of cell life, though mostly a modification of epidermic cells, which are formed so rapidly in some cases that the active life of each cell

cannot be more than a few minutes in duration.

We find, then, that our studies on the blood and the epidermis have led us to the conclusion that the living parts change rapidly, the cell life being from a few minutes to less than thirty days in duration in the blood and epidermis, and that the entire blood and skin may be changed in about ten days without loss of life.

The study of the cell life of muscular tissue and of fibrous, osseous and nervous tissues require different methods of investigation, and will be considered in another paper.

The Topeka Academy of Medicine and Surgery.

The Topeka Academy of Medicine and surgery met in regular session Monday evening, February 12, 1894.

Dr. S. E. Sheldon presented a paper upon the subject, "A Plea for Successful Surgery in Private Practice."

The doctor took the ground that with careful preparation rooms in private houses could be rendered aseptic, and with the same care in operating, even the most difficult cases can be successfully operated upon. He recited numerous cases of various lesions, occurring in his own practice, which he had operated upon with good results.

Dr. Schenck urged that taking private houses as they are found no amount of preparation could render them as satisfactory as a well-regulated hospital. The two-room hovels, where cleanliness is unknown and where it is impossible to secure proper nursing, are not uncommon in the physicians practice.

Dr. McCrea thought the advantage of trained nurses and careful regulation of diet were advantages not easily to be had in private dwellings.

Dr. Alexander thought it was possible to secure good results in private homes if all aseptic precautions were observed, but would then much prefer the hospital.

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Topeka, Kansas, Saturday, February 17, 1894.

Will You Help Us?

We will consider it a great favor if the readers of the JOURNAL will write us an expression of their opinion upon our plan for securing a medical law.

Some plan which will meet with general favor and will receive the general support must be adopted. We must first have it understood that we want the law and then proceed to get it. If anyone has a better plan to suggest we will be pleased to publish it and work for it. A general convention has the advantage that it will unite the interests of all branches of the profession and increase the weight of our demands with the law-making powers. The great trouble heretofore has been lack of unanimity and imperfect plans. The question of legislative enactment has usually been broached about the time of the legislative session.

The result, as we all know, always is a failure.

If we begin now we can perfect our plans, draft a law upon which there will be no dissent, and be prepared to demand our rights of the candidates for election. The physician, though not a politician, perhaps more for that reason, has no small influence within his territory.

We ask again that every one of our readers will express his views to us on this subject so that we may know whether our efforts will meet with approval. Our pages and our influence will be devoted to the cause we have espoused, and we ask your co-operation.

Interesting.

Our native state goes our adopted state one better. The following bill has been introduced in the Ohio Legislature:

"Be it enacted by the general assembly of the state of Ohio, that sections 7338, 7339 and 7341 of the Revised Statutes of Ohio be amended to read as follows:

"Section 7338 amended to read: 1. That all persons sentenced to death by any court having jurisdiction in the state of Ohio shall be held as subjects of experimental research; that such experiments shall be conducted in the interest of science and society, and shall be regulated by approved rules of humane treatment to avoid all unnecessary pain; that in the preparation for such experiments where pain would be occasioned, anæsthetics shall be administered to the extent of complete insensibility to pain, and during the progress of the experiment narcotics shall be judiciously used to allay any pain, and the comdemned person shall not be maltreated in any way; that after the conclusion of such experiments the criminal shall be again anæsthetized and put to death while in a deep sleep and entirely insensible to pain; that the executioner shall be an expert physiologist, duly appointed and authorized by the state, and that such appointments to execute and conduct such experiments shall be vested in the governor, etc."

Ths Future in Medicine.

It is popular to ascribe all diseases to germ origin. The diecovery of this agency in the production of disease was the most marked advance of the age.

The results of the discovery have been beneficial to a great extent, but not to the extent we anticipated. We are no nearer the solution of the problem of cure than before the discovery. Is it not possible that we are on the wrong track? We have no wish to dispute the germ origin of disease, but in many diseases it has been clearly demonstrated that the constitutional symptoms are not due to the germ *per se*, but to the ptomaine which is formed; the germ acting only as a local irritant or perhaps a ferment.

"The word ptomaine means belonging to a corpse or dead body. It was at first restricted to alkaloids produced by cadaveric decomposition, but is now also employed to designate alkaloids of animal origin, formed during life as a result of chemical changes induced by some agency or other acting within the organism."

Then the symptoms which characterize these diseases are the effect of chemical compounds which are produced by certain changes of the tissues. We prefer to say by a fermentative process set up by the germ. If these products are soluble, they are readily taken up by the lymph channel and circulation, and the toxic symptoms result. We must understand that the chemical composition of these ptomaines differs with the different products, and the toxic symptoms must depend in a great measure upon the composition. We find that some of the ptomaines are practically innocent, while others are exceedingly toxic. From investigations that have been made, we have reason to believe that these compounds will conduct themselves in relation to chemical reagents as other alkaloids of similar combination. It has been already demonstrated that certain ptomaines in solution are precipitated and rendered insoluble by a solution of bichloride of mercury, and that the

same result is obtained by the action of iodine upon others.

The destruction of the germ is not of so great importance to us as the decomposition or precipitation of the ptomaine. In fact, we often find germs of tuberculosis existing in the saliva and in the expectoration when there is no pulmonary or other lesion to indicate that a pathological change has taken place. This we explain by saying that there is a resistance to its invasion. We cannot in this paper attempt to explain what that resistance may be, but we are aware that when the resisting power of the cell has become diminished from exposure, over-work or bad nutrition the tissues succumb to the action of the germ and the symptoms of the disease follow. This is true of other germ diseases. Though the germ may be the prime factor, we are disposed to say that the ptomaine is the real materies morbi.

To the chemist who will accurately demonstrate the composition of the different ptomaines and who will by careful experiment discover a reagent which, upon absorption into the circulation, will combine with these alkaloids and render them insoluble and inert, will belong, we believe, the glory of the greatest discovery of the nineteenth century.

Bacteriology without the science of chemistry must be limited to observation of pathological processes and an inaccurate knowledge of cause and effect. In the chemistry of the tissues lies a vast, undiscovered territory where fame and fortune awaits the careful, prudent investigator.

Heart Tonic.

℞

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Strychniæ sulphatis...aa..gr. ¼
Fel. bovis insp.....ʒ ij

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Chloroform.

We were raised, professionally, on chloroform, and have been an advocate for its use for a number of years, but we believe that ether is the safer anæsthetic with two exceptions, viz.: in children and in cases of confinement. Statistics placed before the Twenty-second Congress of the German Surgical Association confirms other reliable statistics on this point. 157,815 cases of anæsthesia were reported with 53 deaths, or one death in 2,902. The number of deaths by chloroform were 46 in 130,609 cases, or one in about 2,839; 14,506 cases etherized without a death. It is claimed that in nephritis or where there is large quantities of albumen in the urine that ether is the safer anæsthetic. It is also claimed by some that chloroform, when properly administered, is as safe as ether; but as a general anæsthetic, it is due to lack of skill in administering it; that alone is against it as compared with ether. In the 14,506 cases of etherization reported, it is not stated whether the patients were selected or not; whether all cases of nephritic trouble were excluded. It is fair to presume that they were not, but were cases as they occurred in practice, and included cases of albuminuria and nephritis. With the exception of children and accouchment, we are decidedly in favor of ether as an anæsthetic.

As expressed by my friend, Dr. Munn, of Topeka, the safety of ether, as compared with chloroform, gives to the anæsthetizer a confident satisfaction which amply compensates for the extra time sometimes required in its administration.

Criminals: Their Treatment.

Confirmed criminals of either sex and rapists should be castrated. We are becoming confirmed in this belief more and more. It is humane treatment to the culprit and protection to the community. The present method of punishment does not appear to be

effective and it affords but little protection to society, and the propagation of criminals goes on.

Castration would be protective in two ways—immediate and remote. First, the dread of castration would be greater in many cases than that of death; second, there would be no progeny to inherit the criminal estate and to be trained in vice. The present generation would be protected and future generations would be benefited. A rapist has an unbalanced mind, run to seed as it were. Remove the cause by castration and the state has restored to it, nine times out of ten, a useful citizen. The nature of the man is changed from a positive aggressive one to an obedient, kindly one.

The thought uppermost in the mind of the average citizen to-day, when he hears of a rape being committed, is death to the guilty one, and too often it is meted out. Does it prevent a repetition of the offence by another? Has or does it lessen the frequency of the crime? Does it benefit the community or state morally or financially? No. In the south, we are told, with all the horrible tortures inflicted on the criminals—roasting them alive, cutting them in pieces, etc.—yet this particular crime is on the increase. There is something radically wrong in the treatment of such cases.

It is not the part of wisdom or truth to say such men deserve to die. They have like passions with you, gentle reader, and if your environments had been the same as theirs, what might you have been and done. Let us not be too harsh in judgment upon them, but seek to find out the cause, and if it is a physical one, remove it, thus saving them, rendering them harmless, preventing a repetition of such men, and giving them a chance to reform, and at the same time set an example of citizenship and morality to the world that will make it better and not worse.

"DOCTORS are hard workers, considering."

"Considering what?"

"How easily they could take life if they wished."—*Harper's Bazar.*

Things Worth Remembering.

The dose of the alkaloids ranges from gr. 1-50 to 1-8, except—

Strychnine	gr. 1-100 to 1-50
Physostigmine	gr. 1-100 to 1-50
Atropine	gr. 1-100 to 1-50
Digitaline	gr. 1-100 to 1-50
Morphine	gr. 1-8 to 1-3
Cocaine	gr. 1-8 to 1-3
Pilocarpine	gr. 1-8 to 1-3

Of the other preparations as follows:

Abstracts	gr. 1-6 to ij
Solid extracts	gr. 1-6 to ij
Fluid extracts	m. i to x
Tinctures	m. ij to xx

The strength of the various preparations is in the following order:

1. Alkaloids.
2. Abstracts and solid extracts.
3. Fluid extracts.
4. Tinctures.
5. Decoctions.

Acids for internal use are always diluted from eighty to ninety per cent.

The dose of the potassium compounds ranges from five to twenty grains.

The dose of sodium salts ranges from one-half more to twice the dose of the potassium compounds.

While the foregoing is not absolutely correct, yet the doses are within safe limits.

It should be remembered that potassium and sodium are not official, but it is their compounds that are used for internal use.

The Incomes of Professional Men.

A writer in *The Forum* discusses the question of incomes of the professional classes in England, and comes to the conclusion that the very successful are overpaid, while the average man is meagrely paid. He gives the average income of the clergy as $600 a year; that of a barrister, $1,200; and that of a medical man, $1,200. A successful lawyer gets $65,000, while the income of Sir Andrew Clark is estimated at $75,000 or

$100,000. This great difference between the incomes of mediocrity and that of success, he thinks is characteristic of the English social system.

There is not any American physician who earns $100,000 a year, and we doubt if $1,200 is not higher than the average medical income. Such figures, however, mean little. The average medical income, for example, varies enormously according as the figures used include the first five years in practice or not. Again, incomes vary enormously in different parts of the country, according to whether one estimates what the doctor charges and what he collects. There is said to be a margin of twenty-five or thirty per cent. between these two sums in this neighborhood. All one can say is that the industrious and God-fearing physician is seldom in want, and never in affluence.—*Medical Record.*

Chloroform in Labor.

There is no doubt in the minds of the practitioners who have had experience in this direction, and all are of the opinion with one accord, that normal labor is facilitated and the pangs of the acme of the second stage mitigated by the use of a small quantity of chloroform. The safety of the procedure depends upon the following well-known facts or points:

First, that the pain of the end of the second stage is sufficiently controlled by far less anæsthesia than would be necessary for surgical purposes; less, too, than would be needed to stop either uterine contractions or even the contractions of the abdominal muscles. Second, that the intra-abdominal pressure before evacuation of the uterus has occurred is too great to make it possible for the patient to inhale too much.

The *Canada Lancet* thinks it safe to say that whether the practitioner has been taught in his student days to use it or has been instructed on that other line, which has fully developed in it all the merits and demerits of conservatism, that Nature is the best midwife and should be left to take her course, he will not use it more than once or twice in practice without being converted to its use in every case, normal or otherwise, in which it is not specially contra-indicated.

Vomiting is not apt to follow the use of the small quantity of chloroform needed. The principal objection to its use has been the fear of increasing the liability of post-partum hemorrhage. That fear is well founded if chloroform is used for any purpose after evacuation of the uterus, but there need be no fear if used only during the second stage. Dr. Byers, of Belfast, says that if proper care be used post-partum hemorrhage will not occur more frequently when chloroform is used than when the anæsthetic is not given.—*Medical Summary*, December, 1893.

DR. NATHAN S. DAVIS, in the opening address to the American Medical Temperance Association, June 8 to 10, 1893, says:

"If the physician continues to speak of alcoholic liquors as stimulants, restoratives, conservatives of tissue or indirect food, and commends their use accordingly, after the accumulated facts of a century, aided by the most scientific researches of the last fifty years have demonstrated, that they are neither stimulants nor restoratives, nor in any sense food, but direct anæsthetics and degenerators of both blood and tissues, it is of the utmost importance that he should be re-educated. For until this is done, his erroneous views will continue to be the views of the masses of the people, and no amount of moral reason or prohibitory legislation will correct them."

WORDS likely to be confounded when spoken: Hæmatin, which is the coloring matter of the red blood corpuscle, and hematin, which is the synonym to hematoxylin; iris, blue flag, and "iris," the curtain of the eye.

Digitalis and Strychnine.

An editorial in the *Temperance Quarterly* severely condemns the use of alcohol and ether in threatened death from chloroform; also the habit of giving alcohol in any form just before giving chloroform. "A alcoholic anæsthetic at the beginning, chloroform in the middle and ether at the end makes death about as sure as it would from a pistol ball through the ventricles of the heart."

Digitalis is recommended as the most direct and reliable cardiac and vaso-motor tonic, and strychnine the most efficient respiratory stimulant, and the author claims if these were judiciously used in all cases of cardiac, vaso-motor and respiratory weakness or failure, to the entire exclusion of alcohol, ether or articles of the same class, it would save many lives annually.

IT was not possible, without the microscope and spectroscope, to learn that alcohol was a direct product of the action of bacteria on sugar or saccharine matter; in other words, that beer, wine and other fermented drinks are pure bacteriological cultures, the alcohol being an active toxic ptomaine, possessing a strong affinity for the hæmoglobin or coloring matter of the blood, as well as for the albumen and water of both blood and tissues. The aggregate of investigation shows that alcohol, instead of being a stimulant, a restorative, a heart tonic or an indirect food, is a direct sedative, diminishing all the molecular changes in living matter, and paralizing the functions of both brain and nerves in direct proportion to the quantity taken.—DR. N. S. DAVIS.

OSLER says that pneumonia is a self-limited disease, and runs its course uninfluenced in any way by medicine; that it can neither be aborted nor cut short by any known means at our command.

Fluid Drinks After Laparotomy.

To the Editor.—The occasion of these remarks is the appearance of a nicely-written little book on the "After-Treatment of Laparotomy" by Dr. Christopher Martin, the trusted assistant of Mr. Lawson Tait. Dr. Martin's book is just issued, and as it is not published in this country, he kindly sent me one of the first numbers. In 1890 I was a pupil of Mr. Tait's for six months, and at this time Dr. Martin had full charge of the after-treatment, as Mr. Tait seldom saw many of the patients after he had performed the operation. I then had ample opportunity to witness the after-treatment by *special permission* of Mr. Tait. Dr. Martin is a skillful surgeon and a keen observer of natural phenomena in the field of laparotomy. His little book is based on the after-treatment of 1,000 cases of abdominal section. He is possessed of independence sufficient to assert his own opinions whenever he may differ from Dr. Tait. It is, to me, gratifying that a man who has had ample opportunity of observing all the after-treatment of 1,000 cases in the service of any distinguished surgeon, that he will rise and assert his opinion in direct opposition to his instructor. Dr. Martin boldly writes against the *non-antiseptic practices* of Mr. Tait. This is after several years of close association with Mr. Tait and the observation of 1,000 abdominal sections of that distinguished surgeon.

I am personally acquainted with some conditions which would explain the difference of opinion between Mr. Tait's ideas of antiseptic practice and those of Dr. Martin. But the chief object of this letter is to strongly protest against the practice of both Mr. Tait and Dr. Martin in the administration of fluids after laparotomy. Dr. Martin reflects Mr. Tait's practice and coincides with it himself when he writes: "In some mysterious way the mere opening of the peritoneal cavity—as in exploratory incision—induces a terrible thirst, and this is aggravated by the *forty-eight hours' enforced abstinence from fluids.*" (Italics mine.) It is

against this cruel "forty-eight hours" that I wish to protest. While I was with Mr. Tait for six months, I was awfully impressed with the intense suffering which the patient endured for the first two days with no fluid to drink, and I determined that I would try other means after laparotomy. I do not think I ever heard patients beg so pitifully as I heard Mr. Tait's beg for a little water. The desire for fluid after laparotomy becomes absolutely intense, and I do not see why a laparotomy patient should long and hope and beg for a little fluid. Nature knows more than all the doctors combined. Thirst demands drink. Besides, it seems to me to be therapeutic foolishness to withhold fluid from a patient whose system should be drained. To drain a marsh we establish a duct so that the whole fluid can flow out of the canal. The kidneys can best drain the system by having the material to be carried out well diluted. The waste-laden blood can be best filtered through the kidneys by a full volume of blood in a dilute state. Again, the blood has been dehydrated by the active saline cathartics previous to the operation so that sound therapeutics would indicate to give fluids after abdominal section in order to reinstate a normal blood condition. Not only this, but *water is no doubt the best-known diuretic.* I believe in washing out the kidney with water after laparotomy.

Since my experience with Mr. Tait, three years ago, I have been *advocating* and *practicing* the giving of drinks after every abdominal section. I give immediately after the operation an ounce of that fluid an hour if the patient desires it. In eight to twelve hours after the operation I give two fluid ounces an hour if the patient desire. Hot fluids slake the thirst better than cold fluids. I use no cold fluids for three to four days. Under this practice of giving fluids after abdominal section, in order to show that it is practical, I can present series of recoveries equal to most statistics. For example, with ample drinks after laparotomy, we had one series of *thirty-two* consecutive cases with one death, and that death had nothing to do with drinks. These cases were not selected, but operated on just as they came in order. Dr. Martin well says: "Ice must be shunned as poison." I am fully convinced that ice is a most disastrous agent after laparotomy and should never be used. The ice entices blood to the mucous membranes which induces more and more thirst, while hot fluids slake thirst most effectually. I know two well-known gynecologists—one gives hot fluids after abdominal section and scarcely ever has any kidney trouble; the other withholds fluids after the operation and I know that he reports at least *five times* as much kidney trouble as the first gynecologist.

I have long advocated and practised giving ample hot fluid drinks after laparotomy, and I think experience and sound therapeutics have proved that it is a wise and humane course. I base it on the following conclusions:

1. Thirst demands drink.
2. *Water is the best diuretic.*
3. Waste material is best removed from the blood in a dilute state.
4. By saline cathartics the blood has been dehydrated before the operation and should be diluted immediately after the operation.
5. Drinks lessen severe suffering.
6. Hot drinks stimulate the shocked system and hasten depletion.
7. Fluid drinks induce sweating and deplete the skin.
8. Drinks serve as a sort of nourishment and keep up the patient's strength.
9. Experience teaches that results with drinks are equally good and I think better than without drinks.
10. Drinks lessen kidney complications following laparotomy.
11. Hot drinks check vomiting and quiet irritation.
12. Ice and cold drinks must be avoided.

Florence Nightengale astonished the doctors by giving the sick soldiers what their appetite craved. Such nursing did not kill the soldiers, though it disturbed the dignified authority of the great physicians.

A year ago Dr. Byford informed me in conversation on the subject of drinks after laparotomy that he was also giving consid-

erable fluid, and he remarked that his patients did better than previously. I also write from another stand point.

Some seven years ago I became infected from dressing a wound. I was in bed about six weeks with a high fever. During that time free drinks were not allowed me. I never suffered so much from thirst in my life. Such measures are not sound in physiological principle. The distinguished surgeon, Mr. Tait, has been the very man who has taught us how to save so many laparotomy patients by *draining* the alimentary canal with salines. Why not drain by the kidney with water!!! I believe that "enforced abstinence" from fluids after laparotomy is not wise therapeutics nor sound physiologic doctrine, and I give, as a final result that systematic experience and systematic observation and reasoning prove to me that the wisest plan is to give hot fluid drinks after (human) laparotomy.

Respectfully,

F. BYRON ROBINSON.

Suckling and Quinine.

Oui finds that when the mother or nurse takes quinine it has no ill effect on the child. The drug is certainly excreted with the milk, but in very small quantities. The quininized milk has absolutely no influence on the child. After a series of careful weighing and measurement it was found that the average was the same in children suckled for a given time by nurses who had taken quinine as in children whose nurses had not taken the drug. Hence a nurse or mother may safely take quinine. Burdel's theory that quinine is noxious to the child is incorrect, and the precautions which he recommends are therefore unnecessary.—*Ar. de Tocologie et de Gynec.*

DRINK destroys more people than all the other plagues together which afflict humanity.—BUFFON.

Something Radically Wrong.

This is an era of progress, but it is barely possible that what is added to one side is lopped off on the other side, and our eqilebrium is the same. There is one thing certainly established during the past decade, and that is that cleanliness comes before godliness. A clean doctor or surgeon is a successful one. Some other things are not so well established. For example, the use of alcohol in disease. The *American Medical Temperance Quarterly*, edited by Drs. N. S. Davis, T. D. Crothers and J. H. Kellogg, in its October number, after giving the statistics of pneumonia and typhoid fever in several of the principal hospitals with the mortality largely in favor of the use of alcohol, says:

"These facts fully justify the proposition made by Dr. Davis, that 'alcohol, instead of generating any kind of force or energy, actually diminishes any known form of force belonging to the living body.'

"It is clearly apparent that alcohol, instead of supporting the vitality of our patients and saving life, as the profession have been led to believe, not by the results of experimental inquiry, but through the propagation of theories based upon false assumptions, as has been clearly shown by modern physiological inquiries, has more than doubled the mortality rate of these maladies in which its use has been supposed to be especially indicated. It is certainly important that the attention of the medical profession should be earnestly called to the consideration of this important question, and it is to be hoped that the time may not be far distant when the intelligent and well educated medical men would as soon think of administering a dose of typhotoxine, or of any other ptomaine or putrefactive product, as to propose to give his patient any form of alcohol, which is itself one of the most common, and by no means the least toxic of the products of microbic action.

"I have received a large number of expressions of opinion respecting the nonutility of alcohol as a remedy for disease,

and a still larger number condemning its indiscriminate use, and assigning to it a very small utility in therapeutics. Many thinking physicians are coming to agree with the eminent Dr. Lankester, M.R.C.S., in the belief that 'disease is very much more successfully combated without the use of stimulants [alcoholics] than with them.'

"Dr. F. F. Richie, another English surgeon, medical officer of health at Leek, a large manufacturing town, states that he has not 'for ten or twelve years lost a single patient from typhoid fever, and has never given a single drop of stimulant' in this disease, but has invariably seen his patients recover 'far quicker than used to be the case in former days when a large stimulant was given.'

"Dr. L. M. Bennett, an English physician, stated a few years ago his belief that 'there is no curable disease but what may be better cured without alcohol than with it.'"

Wanted: Some one to solve the problem by eliminating the wrong radical.

Oxygen and Alcohol for Septicæmia.

At the last meeting of the American Gynecological Society, Dr. Currier, of New York, read a paper in which he advanced the idea that septicæmia is an acute toxic mycosis of the blood, resulting from the decomposition of substances in the intestines and the absorption of decomposing material from the genital canal after labor, or the absorption of toxic substances through the serious surfaces after an operation on the abdominal or pelvic organs. If recovery occurs, it is obtained by means of phagocytosis, which disposes of the germs, and by the oxidation and elimination of the toxic products. The author recommends giving highly concentrated liquid foods and alcohol, and the administering of oxygen.

No fault can be found with the doctor's theory concerning the nature of the disease, nor the importance of sustaining the patient by easily assimilable food, and his suggestion respecting the use of oxygen is especially valuable. We have used this remedy in cases of septicæmia with wonderful effects. The cyanotic appearance observed in case of intense systemic poisoning, we have seen disappear as if by magic, as the result of the inhalation of oxygen by means of a mask placed over the face, the oxygen being received from a large distended rubber bag. It is impossible to understand, howewer, by what theory consistent with the results of modern physiological investigation, Dr. Currier administers alcohol along with oxygen.

It is well known that alcohol diminishes the power of the red corpuscles to transmit oxygen to the tissues, since it has a powerful affinity for hæmoglobin, combining with it as soon as it enters the blood and destroying its ability to absorb oxygen. We most heartily recommend oxygen in septicæmia and other allied conditions, having demonstrated its value by personal experience; but we must, with equal emphasis, condemn the use of alcohol in such cases. This drug is itself a toxic agent, and not a food, as is supposed. Attention was called to this fact by Dr. Hart, the eminent editor of the *British Medical Journal*, in his recent address on cholera at Milwaukee. The use of alcohol in cases of toxæmia can only be condemned in the light of our modern knowledge respecting the relation of toxic substances to the human body. But oxygen is nature's sovereign remedy in these cases. It is only through its agency the recovery is possible. Nothing can be more inconsistent, however, and we can scarcely think of anything more detrimental to the patient than the use of alcohol, since this drug not only introduces additional poison requiring oxidation into a system already loaded with such poisons, but lessens the power of the body to absorb and distribute the only agent by which the oxidation and destruction of the poison can be effected.—J. H. K. in *Med. Temperance Quarterly*.

CONSTIPATION in infants is often best relieved by injections.

Acute Tonsillitis.

Prof. Cohen has given the following formula for a gargle, which is considered by him as one of the very best for acute tonsillitis:

℞

Tr. guaiac. ammoniat.....
Tr. cinchonæ comp....aa..℥ ij
Mel despumati.....℥ vj

And—

℞

Potassii chloridi.....℥ ij
Aquæ menth. piperit.....℥ iv

M. Sig.: Use as a gargle.

The manner of making the above preparation is as follows: Dissolve the potassii chloridum in the peppermint water; put the honey in a bottle, and by shaking, get it thoroughly spread over the sides; add the guaiac. and cinchona, and shake the bottle while doing so, in order that they may get well mixed with the honey; then add the potassii chloridum solution, and again shake the bottle thoroughly. The manner of making this has much to do with whether it will be pleasant or not. If it is prepared as above, it will be a very agreeable preparation.—*Jour. of Materia Medica.*

BLOOD tumor (othæmatomata) on the ear, idiopathic in origin, is in all probability due to disease at the base of the brain. It is true that these tumors are generally found in the insane, but there may be disease at base of the brain without insanity, and the insanity may develop later on. The tumor is of grave significance. The restiform bodies have been removed and hemorrhage beneath the skin of the ear has developed within twelve to twenty-four hours. Pinching the sciatic nerve will cause the blood to rush to the skin of the ear.

ANÆMIA, due to hemorrhage, is best treated by rest, nourishing food and fresh air; letting iron and all medicines alone.

The Servant was Horrified.

Dr. S. had last winter a newly arrived Hibernian for a servant; he had also recently purchased a pair of porpoise-leather boots. His wife, attracted by the novelty of the new footwear, asked the doctor in the presence of the servant what they were made of, to which he responded "Porpoise-hide."

Shortly after the lady from the Emerald Isle interviewed Mrs. S., and announced her intention of "laving whin me week is up." Mrs. S., somewhat surprised, asked the disturbed domestic the reason for her announced departure, to which bridget responded, with a horrified air:

"Yer husband is a docthers, mum, an' I've herd them docthers do the cuttin' up people, an' didn't I hear 'um, with me own ears, say that the boots of him were made of pauper's hide? It's me own ould father that died in the poor house, an' I wouldn't be sarvin a haethen that uses the skin of the poor to cover his dirty feet wid."—*Boston Com. Bulletin.*

Creosote in the U. S. P. 1890.

In our September, 1889, issue we publish a report "On the Purity of Creosote," by W. Brandes, a German chemist, the purpose of which was to review the then existing tests of the German Pharmacopœia, to suggest a few new and more stringent tests, and to furnish a comparative statement of the behavior of various brands of C. P. Creosote from Beachwood-Tar toward all the tests. The new tests suggested were the following:

1. A positive test can be made by the process suggested by Hartmann & Hauers, of Hanover, by which 4 ccm. water, 4 ccm. caustic soda solution and 2 ccm. creosote are mixed; this must yield a perfectly clear, amber solution, or prove the presence of neutral oils; if the solution is brown it shows that some impure coal-tar particles still remain in the creosote.

2. Besides the test of the Pharmacopœia, the following, proposed by Hartmann & Hauers, is worthy of consideration. If 2 ccm. creosote, 4 ccm. petrol. benzin and 4 ccm. of a cold saturated caustic barytes solution are shaken together, the benzin solution should not assume a blue or dirty, nor the aqueous solution a red color. A color-reaction would show the presence of foreign particles *i. e.*, (other besides neutral oils) of beach-wood-tar, and consequently that the creosote was not sufficiently purified.

Both tests have been adopted by the new U. S. P. 1890, as they were also by the new German Pharmcopœia. This is gratifying to the authors; and we are pleased to have had the privilege of first publishing the tests here.—*Notes on New Remedies.*

Sir Andrew Clark—A Reminiscence.

BY FRANCIS E. WILLARD.

This chief among the great physicians of London has just passed away in the sixty-seventh year of his age. He was Tennyson's physician and Gladstone's; indeed, so great was his fame, that when, two weeks ago, he was stricken with paralysis, seven hundred messages of inquiry came to his family within a few hours. He was a small, slight man, of what we call the wiry type, and a remarkable illustration of what "mind cure" can do for a person who is determined to live whether or no. It is said that forty years ago, when he sought admission as a physician in one of the London hospitals the choice fell upon him in preference to a number of equally-eager aspirants on the basis that it was a "delicate little fellow and would not live long anyway." He was condemned to death in his youth by the verdict of physicians, but eluded the same by a novel process—he flung himself into the hardest kind of work, paying no attention to his fears and concentrated his forces altogether on his hopes.

When I went to see him he extended a hand white as a lady's and soft as velvet, and in a voice that matched the hand, went into a most careful diagnosis of my case; beginning with heredity and ending with the last morsel I had tasted that morning, he followed me through every lane of life, ancestral and individual; carefully examined my heart and lungs, saying (I think this was a part of his mind-cure process), "Beautiful lungs, beautiful heart, no organic difficulty, over work, nervous exhaustion. What you need is rest, pure air, cheerful companions, simple diet, and no end of out-doors."

His manner was most reassuring, and had in it a tender considerateness hardly to be expressed. When he asked to take the pulse or see the tongue, he prefaced the request with the words, "my dear patient." It was apparent that not only great skill and high character, but a most fortunate manner were the essentials of his success. He prescribed no medicine whatever, saying that he thought very little of it, and that old Mother Nature was the only true physician, and gave to me some simple rules which seemed so good that I have had them copied for the benefit of any who may care to profit by the wisdom of a man both great and good, and a physician of unrivaled fame.

At my request he wrote down three aphorisms that he had used during our interview: "Labor is the life of life;" "Ease is the way to disease;" "The highest life of an organ lies in the fullest discharge of its functions." Here follow what he called his "temporary general instructions":

"On first waking in the morning, sip about half a pint of water—cold or hot; on rising, take a tepid sponge bath, followed by a brisk, general toweling. Clothe warmly and loosely. Avoid chills, damp and passive exposure to cold. Take three simple, nourishing meals daily, and nothing between them. Breakfast at eight to nine; plain or whole meal bread, or toast and butter with eggs, or fresh fish, or cold chicken, or game or tongue—fresh, not preserved—and towards the close of meal about half a pint of tea, not infused over five minutes, or of cocoatina or of coffee and milk.

"Dinner from 1 to 2 o'clock: fresh, well-

dressed meat, bread, potatoes, some well-boiled green vegetables, if it agrees, and either some simple farinaceous pudding or some simply-cooked fruit. Towards the close of meal drink water.

"High tea, five or six hours after dinner: whole-meal bread or toast and butter, with broiled fish or cutlets, or a cold chop, or cold meat, or cold chicken, and towards the close of meal about half a pint of China tea, not infused over five minutes; cocoatina or cocoanibs may be substituted for tea if it is preferred and if it agrees.

"Nothing after this meal, except that on going to bed you may sip a tumblerful of water—hot or cold.

"Avoid soups, sauces, pickles, spices, curries; salted, smoked, tinned or otherwise preserved foods; pies, pastry, cheese, creams, ices, jams, dried fruits, nuts, raw vegetables, compotes, confectionery, malt liquors, cider, lemonade, ginger, beer, much liquor of any sort, and all sweet, sour and effervescent drinks.

"Walk at least half an hour twice daily.

"Retire as soon as possible after ten. See that your room is airy. Avoid self-notice and self-distrust. Shun ease and lead a full and regular, an active and an occupied life.

"Whenever you have to speak at night, be sure to lie down for an hour before tea.

"Take nothing between meals.

"Never take a sleeping draught.

"Take as little medicine as possible; accept your sufferings; strength is perfected in weakness; in labor you will find life. If you are terribly run down some time, go away for a fortnight's rest and with each meal take a teaspoonful of Fellows' syrup of hypophosphites."

Losophen as a Dermal Antiseptic.

This remedy possesses properties which entitle it to a distinct place in the therapeutics of diseases of the skin. Dr. Saalfield, who was the first to call attention to its anti-parasitic effects, has recently reported the results of his latest experience before the dermatological section of the German association of Scientists and Physicians. It was found that one per cent. solutions of Losophen exerted decided antiseptic effects upon the organisms of anthrax, cholera, typhus, the staphylococcus pyogenes albus, aureus, and citreus. Of great importance, from a dermatological point of view, is the fact that the trichophyton tonsurans and the achorion Schonleinii (the organism of ringworm and favus) are killed in thirty seconds by this solution. Cases of ringworm are frequently difficult to cure, while favus, which of late years has become much more common in this country, is exceedingly rebellious to treatment. It would seem, therefore, that Losophen, by reason of its rapid and destructive effects upon the organisms causing these affections should be a most valuable remedy in their treatment. Clinical investigation has shown that it is an excellent anti-mycotic and anti-parasitic stimulant of much value in chronic affections of the skin, such as acne vulgaris, sycosis, prurigo, chronic eczema, etc.

I HAVE been prescribing Guaiacoline for the past three months and find it to be a reliable combination. The well known value of cod-liver oil in all wasting diseases, together with the virtue possessed by Guaiacol in pulmonary and brochial troubles makes Guaiacoline, in my judgment, a valuable preparation.

Yours,

D. D. WILSON, M. D.

SOCIETY MAN—"My baby had a very narrow escape this morning."

Friend—"Indeed! How so?"

Society Man—"The nurse girl thoughtlessly left it alone in the care of its mother."
—*New York Press.*